

Helicopter, Longbow Apache (AH-64D)

What is it?

The Longbow Apache is a two-engine, four-bladed, tandem seat attack helicopter armed with a 30 mm cannon, 2.75 inch rockets and Hellfire missiles. It is the heavy attack helicopter for both the current and future forces. It is capable of conducting the full spectrum of warfare from stability and support operations to major combat operations. The Longbow Apache is the current attack helicopter used by Army Aviation across the world. The Longbow has the capacity to conduct close combat attacks, interdiction attacks, armed reconnaissance, and security in day and night conditions in support of the joint/combined arms commanders' schemes of maneuver. Fielded initially in 1998, the signature of the Longbow Apache is the Fire Control Radar (FCR) for targeting/obstacle avoidance, and the Radar Frequency Interferometer (RFI) for threat awareness. The aircraft is an improved version of the AH-64A model that transitioned from analog to digital and introduced many new technologies.

What has Army Aviation done?

Longbow Apache has been the workhorse of attack helicopter operations for the last several years. The aircraft has performed countless missions in support of coalition forces both in Iraq and Afghanistan, and has seen many enhancements over the last decade consisting of software and hardware improvements. The many software improvements have included an improved aircrew interface, moving map displays and communications suites, to name a few. Two pivotal hardware improvements consist of the fielding of the Modernized Target Acquisition Designation System (MTADS) and the Video Unmanned Interoperability Teaming (VUIT-2) System.

In 2006, the Longbow Apache achieved a higher level of lethality primarily due to the fielding of the MTADS. With this improvement, the Longbow Apache changed the way attack helicopter operations are executed. The ability to see much further with the sensor allows Longbow Apache aircrews to fly at much higher altitudes, therefore taking them out of small arms fire range. Aircrews are able to safely engage at greater distances while simultaneously preventing fratricide. Two other hardware improvements which also contribute to the capability to fly at higher altitudes are the fielding of the Common Missile Warning System (CMWS) 5th Sensor and the Aircraft Survivability Product Improvement (ASPI) System.

In 2007, Longbow Apache incorporated the VUIT-2 System, which was fielded to 1-10 Attack Reconnaissance Battalion (ARB) in 2008 and allowed aircrews to see UAV video in the cockpit, thereby providing increased situational awareness and greater lethality. Manned-Unmanned Operations (MUM-O) will likely become a key feature of future attack helicopter operations.

What continued efforts does Army Aviation have planned for the future?

MUMT-2 (Manned Unmanned Teaming - Level 2 (Level of Interoperability 2 (LOI-2))) refers to a product that Boeing Helicopters is going to put on the Block II Apaches in the near future. It will allow an aviator in the front seat of an AH-64D to see the video of a UAS (Unmanned Aircraft Systems) on the multi-purpose display in the front and back seats. The video can then be transmitted to an OSRVT (One Source Video Remote Terminal) or to another Apache.

VUIT-2 (Video Unmanned Interoperability Teaming - Level 2) is a similar system that is currently installed in one battalion but apparently will not get any future funding for any other Apache Battalions. It has most of the capabilities of the MUMT-2 system but is not a Boeing product (it was produced by Lockheed-Martin).

Other planned improvements for the Longbow Apache include software versions 13 and 13.1, which will equip aircrews with an entirely new communications interface, allowing for easy manipulation with a decrease in workload.

Why is this important to the Army and Army Aviation?

In the near term, the Block II Apache Longbow will constitute more than half the Apache fleet, with Apache Block III (AB3) not fully fielded until FY 16. The continual technology refreshments and insertions will keep the Block II aircraft relevant on the modern battlefield until Block III fielding. The improved communication controls and displays will reduce the time and task load for the crews freeing them for more efficient and lethal operations. The MUM-T capability will allow the equipped aircraft to view LOI 2 video from UAS and transmit the UAS and MTADS video to other aircraft and to the ground commander. This enabler will continue to help feed the common operational picture and provide situational awareness to all entities participating in the operation. Despite the continued improvements to Block II, the aircraft will be constrained in the future, as its processors are currently operating from 93 to 98 percent capacity. Left unaddressed, a capability gap will eventually emerge as technology outpaces the aircraft.

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